



UNITED STATES NAVY

MEDICAL NEWS LETTER

Editor - Captain L. B. Marshall, MC, USN (RET)

Vol. 25

Friday, 4 March 1955

No. 5

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Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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Notice

Due to the critical shortage of medical officers, the Chief, Bureau of Medicine and Surgery, has recommended, and the Chief of Naval Personnel has concurred, that Reserve medical officers now on active duty who desire to submit requests for extension of their active duty for a period of three months or more will be given favorable consideration.

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Opportunity for Residency Training in the Navy

Applications for residency training are requested from Regular officers and those Reserve officers who have completed their obligated service under the Universal Military Training and Service Act, as amended.

Training is available for Regular officers in all of the major medical specialties. It is available for Reserve officers in Pathology, Orthopedic Surgery, Obstetrics and Gynecology, Pediatrics, and Urology. There are a few billets available for training in civilian hospitals in the specialties of Anesthesiology, Otolaryngology, Dermatology and Syphilology.

Residency training may be started immediately on completion of internship. It is now the desire of the Bureau of Medicine and Surgery to continue a resident in training without interruption until he has completed the formal training requirements leading to certification by an American Specialty Board. The procedure will be strictly adhered to in every case where the demands of the service permit and providing the trainee shows satisfactory progress. (ProfDiv, BuMed)

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ADMIRAL HOGAN NAMED SURGEON GENERAL OF THE NAVY

Rear Admiral Bartholomew W. Hogan, Medical Corps, U.S. Navy, took the oath of office as Surgeon General of the Navy on February 15, 1955, to serve for a period of four years. The twenty-sixth Chief of the Navy's Bureau of Medicine and Surgery, and the twenty-second to hold the title of Surgeon General of the Navy, Admiral Hogan's oath of office was administered by Rear Admiral Ira H. Nunn, U.S. Navy, Judge Advocate General of the Navy, in the Office of the Secretary of the Navy, Mr. Charles S. Thomas, at 12:00 before a gathering of distinguished guests.

Born in West Quincy, Massachusetts, on January 29, 1901, Admiral Hogan is the first native of Massachusetts to hold the office of Surgeon General of the Navy. The son of the late Thomas F. and Jennie (Toner) Hogan, he graduated from Boston College High School, Boston, Massachusetts; had pre-medical instruction at Boston College; and, in 1925, received the degree of Doctor of Medicine from Tufts College Medical School, Boston, and was awarded the Phi Lambda Kappa Medal for highest achievement while attending medical school.

Appointed a Lieutenant, junior grade, in the Medical Corps of the Navy on June 6, 1925, Admiral Hogan was promoted to Rear Admiral on August 9, 1952, with rank to date from April 1, 1952.

In addition to the Silver Star Medal, the Navy and Marine Corps Medal, and the Purple Heart Medal, Rear Admiral Hogan has the American Defense Service Medal with star; the American Campaign Medal; the European-African-Middle Eastern Campaign Medal with two stars; the Asiatic-Pacific Campaign Medal with four engagement stars; the World War II Victory Medal; and the National Defense Service Medal.

Admiral Hogan is a Fellow of the American Medical Association; American College of Physicians; and American Psychiatric Association; Diplomate of the American Board of Psychiatry and Neurology; a member of the American College of Hospital Administrators; a member of the House of Delegates of the American Hospital Association; and a member of the House of Delegates of the American Medical Association. He is an Examiner for the American Board of Psychiatry and Neurology and an Associate Professor of Psychiatry, Georgetown University School of Medicine, Washington, D. C. In 1945, he received the Honorary Degree of Doctor of Laws from Mt. Saint Mary's College, Emmitsburg, Maryland, and in June 1954, an Honorary Degree of Doctor of Laws from Villanova College.

Admiral Hogan's official address is 2073 Commonwealth Avenue, Auburndale, Massachusetts. He is married to the former Grace Gloninger of Pittsburgh, Pennsylvania, and they have three children, Bartholomew T. Hogan, Thomas F. Hogan, III, and Mary Ledlie Hogan. (TIO, BuMed)

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A Letter from C. N. O.

The following letter from the Chief of Naval Operations is being published by approval of the Surgeon General.

"I would like to confirm to you the remarks that I made on the occasion of the annual meeting of the Naval Relief Society concerning the contribution that has been made by the individuals of the Naval Medical Corps in the field of care of dependents.

The doctors-to-troops ratio that has been assigned to the Navy is not adequate to provide proper dependent care in addition to the prior responsibility of the care of military personnel. And yet, dependent care is a matter of vital importance in the vitally important field of morale and Service attractiveness.

I am aware of the extraordinary efforts that have been made by the Medical Corps to overcome the ratio deficiency by dint of extracurricular and out-of-hours work and sacrifice by Navy doctors.

I am aware of the fact that many medical officers have given, and are giving, generously and uncomplainingly, of the little time which should rightfully be theirs for their own rest and their own pursuits. They can only be compensated by the appreciation of their Service mates and their families, and I wish that I might be able to extend to each one who has been so generous and unselfish, my own personal appreciation."

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Colchicine in Treatment of Hodgkin's Disease

Although patients with Hodgkin's disease may in many cases be controlled satisfactorily for a number of years by the use of irradiation, nitrogen mustard and triethylene melamine, a state of refractoriness to these agents ultimately ensues. The addition to the therapeutic armamentarium of other agents for the palliative control of this fatal disorder is obviously desirable.

The recognition of the radiomimetic potentialities of colchicine led early to its trial in the control of neoplastic processes. However, the toxicity, as well as the ineffectiveness of this drug in the conditions in which it was first tried, discouraged its further use, although it has been retained as a useful agent in the treatment of acute attacks of gout, for

producing polyploidy in plants, and as an experimental tool to determine the site and rate of cellular proliferation. Recently, there has been a renewed interest in the use of various constituents of *Colchicum autumnale* L. and their derivatives in the management of neoplasia. The report of Isch-Wall of rather remarkable ameliorative effects, following the intravenous injection of colchicine in four cases of Hodgkin's disease, led the authors to apply this form of therapy first to a series of patients who were no longer responsive to the conventional treatments with irradiation, nitrogen mustard, and triethylene melamine, and subsequently to previously untreated patients. Experience indicated that colchicine may have a definite, although limited, usefulness in the management of Hodgkin's disease, and may supplement the limited procedures now available for the management of this fatal disorder.

The present report summarizes the typical results obtained on a series of 10 patients who, except as noted, received 3 mg. of colchicine (U.S. P.) dissolved in 1 ml. of sterile isotonic sodium chloride, intravenously every third day for variable periods. In all cases the drug was tolerated well with no evidence of local irritation or serious toxic effects.

The study has confirmed the claim that colchicine in doses of 3 mg. every third day intravenously is well tolerated and may have a suppressive effect in some cases of Hodgkin's disease. In patients who have received irradiation, nitrogen mustard, and triethylene melamine to tolerance, the drug is useful in exerting a palliative action which, in some patients, has been striking.

Results confirm in part the report of Isch-Wall on four patients. The only other reference to the use of colchicine in Hodgkin's disease is that of Brown and his co-workers, who reported a remission in five cases following the oral administration of 0.6 mg. of colchicine three times daily, combined with 5 mg. desoxycorticosterone intramuscularly and 1 gm. of ascorbic acid intravenously daily. However, these authors failed to follow their brief abstract with a further report of their results and do not give any rationale for the combined therapy which they used.

The toxic nature of colchicum, the crude drug from which colchicine is derived, has been recognized since ancient times. The acute toxicity of colchicine in mice (LD_{50}) is 3.10 ± 0.20 mg. per kilogram of body weight, which is far more than the amounts ever used therapeutically. Several instances of fatalities have followed the ingestion of 30 to 60 mg. of colchicine and of unknown amounts of the crude drug. The toxic manifestations in these cases, as in the therapeutic use of the drug in gout, consist of irritation of the intestinal tract with profuse vomiting and diarrhea. This may lead to depletion of the extracellular fluid volume, shock, anuria, and death. It is questionable if any serious toxic effect is manifested in organs other than the intestine in these cases. In three carefully studied patients with inoperable cancer who had been treated with colchicine,

Brown and Sneed noted no specific findings attributable to the drug at autopsy, except perhaps, an exaggeration of the usual findings incident to the agonal period. The ulceration of the gut and melena which follow oral administration of the drug may be attributed to the fact that a high concentration of the drug comes into direct contact with the intestinal mucosa. It is noteworthy that no disagreeable gastrointestinal effects followed the intravenous injection of the relatively large doses (3 mg.) used in the present study.

Colchicine is one of several related alkaloids derived from meadow saffron, *Colchicum autumnale* L. It is difficult to determine to what extent the toxicity following ingestion of the crude drug, colchicum, is due to colchicine and to what extent it is due to other potent alkaloids present in the mixture. A second alkaloid derived from colchicum, colcemide, has recently been recommended for the treatment of chronic myelogenous leukemia. This drug, related to colchicine, has a potent depressing effect on the polymorphonuclear cells in the normal as well as in leukemia. Colchicine, in contrast, shows relatively little effect on the leukocyte count except for a slight depression involving primarily the polymorphonuclears. The erythrocyte count and hemoglobin content are not affected. Apparently, the substitution of a methyl group in colcemide for the acetyl group in colchicine alters markedly its pharmacologic effects, for colcemide, although effective in myelogenous leukemia, is without effect in Hodgkin's disease.

The most noteworthy objective effect of colchicine in Hodgkin's disease has been the striking relief of the hyperpyrexia characteristic of the disease. The fever declines promptly. Whether this is a result of a direct action on the neoplastic tissue or a nonspecific antipyretic action, remains to be established. In any case, the prompt decline in the body temperature has contributed to the marked subjective improvement of patients. In addition, there has been a general feeling of "well being," almost approaching euphoria, which is not seen with other measures producing more rapid and striking reduction in the size of the lymph nodes. This effect may be related to the analgesic action of colchicine, or possibly to its stimulating effects on the adrenal cortex.

The results of the present study are sufficiently encouraging to warrant further trial of colchicine and related alkaloids in the treatment of Hodgkin's disease, particularly when other measures have been exhausted. Preliminary results, observed by the authors, also suggest that a further study of the combined effects of colchicine and irradiation or other radiomimetic agents is indicated. The demonstrated radiomimetic effect induced by colchicine and its derivatives in experimental cancer, as well as in Hodgkin's disease and leukemia in the human, warrants the further trial of these compounds as palliative agents in neoplastic disorders not amenable to surgery. Colchicine itself, however, appears to have only temporary effects as far as regression of the lesions of Hodgkin's disease is concerned, and when used alone is inferior to other methods now available. Its principal advantage

appears to reside in its potent antipyretic and analgesic effects, which are striking. At times, however, it induces a demonstrable decline in the size of the enlarged glands in Hodgkin's disease, and its toxicity appears to be less than that seen with the nitrogen mustard group of drugs, the use of which is limited by their marked depressing effect on the hematopoietic tissues. (Ann. Int. Med., Jan., 1955; A. Grollman, M.D., Dallas, Tex., Major R. L. Johnson, USAF (MC), and Capt. W. W. Regan, USAF (MC), Sheppard Air Force Base, Tex.)

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Insulin Requirements of Diabetic Children

A study of juvenile diabetics who were maintained in good control was undertaken to determine the exogenous insulin requirements in relation to age and growth and also to ascertain whether there is any relationship between the insulin requirement and the age of onset of the disease. The study is based on serial observations of the insulin and nutritional requirements and growth of 48 children with diabetes mellitus under continuous management. These patients have maintained essentially physiological control of their disease within weeks after onset, and at the time of the observations of this study, they were also free from known infections and emotional disturbances.

This study of the exogenous insulin requirement per day of well controlled juvenile diabetic patients showed a pattern of changing rate of increase which correlates with what has been observed for growth as revealed by measurements of height and weight. The correlation of insulin requirements and growth has been traced and shown (1) in the serial observations of patients and (2) in the comparison of the curves of mean insulin requirement and the mean height and weight curves for varying ages and periods of growth.

In retrospect, when the authors reviewed and compared the curves of height, weight, insulin requirement, and caloric intake of the well controlled diabetic patient, they discerned the interrelationship of caloric and insulin needs, and gains or failures to gain in height and weight. During the pre-pubescent and pubescent period, an acceleration in growth of height and weight, as well as other manifestation of maturation, are predictable for the normal boy or girl. This acceleration in growth was found to be accompanied by a rapidly increasing insulin requirement.

For a majority of patients, the authors noted that the insulin need for the size and age of the patient was low after initial regulation and metabolic restoration for a period of months, but then increased gradually until it reached the range found for the group of diabetic children of the same age and size. The amount of insulin required and the duration of the period of

metabolic recovery depend on how long the state of hypoinsulinism and catabolism have persisted. After stabilization is achieved, the insulin requirement becomes fairly constant if the caloric intake is maintained at a relatively fixed amount. During this early period of treatment, the weight of the child increases rapidly, but height remains almost stationary. However, within a short period, the child's height begins to accelerate, and concurrently with this increase in growth rate, the insulin requirement increases and eventually attains in general almost a constant ratio with body weight.

An evaluation of the daily insulin requirement, weight, and body build of an individual patient in good control, in relationship to the range of values for insulin and growth of a group of well controlled diabetic children, gives some indication of the degree of hypoinsulinism. Extremely low values for a small percentage of juvenile patients suggest the possibility of a different type of diabetes.

A knowledge of insulin requirement provides useful information for clinical application as a guiding factor for maintaining good control and normal growth. For example, during the early months of treatment, the insulin and nutritional requirements change concurrently with marked changes in growth of weight and height, and that accounts for the difficulty in attaining and maintaining good control of the disease. The rate of change is dependent on whether the disease has its onset in midchildhood or just prior to, or concurrently, with the prepubescent growth spurt, being accentuated during the period of rapid growth. However, after this period of changing body composition, a definite pattern is established. It is of some importance to know and to be able to predict the future requirement of a given child, in order to allay the fears of the child and the parents who may assume that the disease is growing worse as in the succeeding years he requires more insulin. The predictability of pubescent requirements, especially of those who are rapidly increasing their insulin dosage from low to high amounts corresponding with their spurt of growth, will help immeasurably in the management of the diabetic patient during this difficult period. As adulthood is reached, it is equally important that the insulin dosage and caloric intake are adjusted to the person's adult requirement. This has been demonstrated well in the older girls of the group. At this period, the adolescent girl will become obese if her insulin and caloric intake are not adjusted to the lower requirements of an adult. (Am. J. Dis. Chil., Jan., 1955; H. G. Kelly, M. S., P. T. Rao, M. D. and R. L. Jackson, M. D., University of Iowa College of Medicine, Iowa City, Iowa)

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Cholografin in the Post-Cholecystectomy Syndrome

When a group of symptoms is presented for which cholecystectomy is performed with expectation of a cure, and then remains essentially unchanged after the operation, a puzzling and frustrating situation has been created. This problem has been recognized as the post-cholecystectomy syndrome. Not only must a decision be reached as to whether the symptoms originate inside or outside the biliary tract, but also, with the removal of the gall-bladder, one is deprived of the essential organ which can be visualized by x-ray and which may aid in delineating other portions of the ductal system. Lack of diagnostic facilities to investigate intrinsic disease of the common duct has placed hopeful dependence upon symptomatology and the indirect approach by the elimination of other causes for a similar clinical picture. Laboratory procedures have been helpful but not entirely satisfactory. Finally, surgical exploration of the biliary tract is considered for a diagnosis. A new procedure has been evaluated and is being utilized to outline the common duct through an intravenously administered radio-paque medium known as Cholografin which will strongly influence the management of problems involving this structure. The post-cholecystectomy syndrome is reviewed in its relation to this new diagnostic measure.

Cholografin, when injected intravenously, rapidly filled the hepatic and common ducts so that the structures were visualized in a roentgenogram. Visualization of the biliary tract was obtained with equal success in the presence of an intact gall-bladder or following its removal. This compound is the di-sodium salt of N, N₁ adipyl Bis₃-amino-2:4:6 tri-iodobenzoic acid, and it occurs as a crystalline powder readily soluble in water, yielding a colorless solution. The iodine content, 64.32%, is firmly bound in a molecule and is not split off after injection into animal or man. Because this substance is actively excreted by the liver cells, it appears in the bile in a few minutes, where it may reach a concentration 30 to 100 times that of blood. No absorption occurs from the gastrointestinal tract from which major elimination takes place.

If the tissues around the vein are injected inadvertently, a mild inflammatory reaction and irritation occur. Slight nausea, dizziness, trembling, sneezing, or restlessness occurred after injection in only 5% of cases. Only one case of nausea was reported by Frommhold in 200 cases. Three cases of delayed chills and fever were reported by Hornykiewytch. Although no definite case of allergic reaction has been encountered, routine tests for hypersensitivity were performed before injecting the full dose of the contrast medium.

The term "post-cholecystectomy syndrome" refers to the symptoms that prevail following removal of the gall-bladder, and which had existed prior to operation, or which appear as a new group of symptoms after operation on the biliary tract. The incidence of postoperative symptoms

varies with the preoperative demonstration of calculi. Where pain had been found to exist in the presence of gall-bladder stones, good results were obtained by operation in 80 to 95% of cases. Cholecystectomy, performed for the correction of pain presumably originating in the biliary tract in the absence of stones, has been considered successful in only 50 to 60% of cases.

One of the more common causes for the persistence of preoperative symptoms is found in an erroneous diagnosis made prior to surgery. Cholecystography has been a great aid in the evaluation of gall-bladder disease, although its index of accuracy has been extremely high, it has proved to be not infallible. The incidence of error on the basis of cholecystography is small but is to be considered as a source of mistaken diagnosis. Another error in preoperative diagnosis is the failure to recognize that functional disorders are associated with pain that may suggest its arising in the biliary tract. Symptoms, which are atypical but which mimic cholecystic disease, are often explained by the presence of a peptic ulcer, malignancy, acute or chronic pancreatitis, hiatal hernia, parietal neuralgia, or pulmonary or cardiovascular disease. It should be realized, in addition, that true gall-bladder disease may exist in conjunction with these other types of disorders, whether they be of a functional or an organic nature.

One of the serious complications of gall-bladder surgery, contributing in a large measure to the post-cholecystectomy syndrome, is the common duct stone. In the presence of cholelithiasis, the incidence of common duct stone has been estimated at 13.4 to 47%. What is, perhaps, of greater importance in regard to the persistence of biliary tract symptoms is the incidence of stones that have been undetected upon the first exploration of the common duct. Childs and Prevedel report that, after the initial examination, stones were later identified in a subsequent operation in 3% of cases and in 1% at autopsy.

The residual stone remaining undetected in the common duct presents the most important problem in evaluating symptoms which appear to arise in the biliary tract. The high percentage of common duct stones associated with cholelithiasis, and the failure to remove all the stones from the common duct at the initial examination despite palpation or exploration of the common duct, together with the understandable limitation of operative cholangiography, emphasize the extreme care required to clear the common duct of foreign material with any assurance that such efforts are entirely successful. On clinical grounds, the history of biliary colic without jaundice is good reason to hesitate in accepting a diagnosis of ductal stone, despite reports of a fairly high incidence of stone that may be lodged in the common duct without causing jaundice.

Biliary dyskinesia has been demonstrated to be a distinct entity in which symptoms provoked by a pharmacologic agent, such as morphine, were associated with anatomic changes in the common duct that were recorded simultaneously on film. The distention of the common duct and

the increase in opacification, both of which were altered by the administration of nitroglycerin, at which time the dye was seen to flow into the duodenum, give evidence that functional changes may occur at the sphincter of Oddi. Such phenomena may account for symptoms referable to the biliary tract after the gall-bladder has been removed.

Additional disorders of the common duct which have accounted for symptoms following cholecystectomy are to be found arising in the cystic duct stump, fibrosis of the sphincter of Oddi, stenosis of the common duct, neuromata of the common duct and cholangitis.

A new radiopaque medium, Cholografin, having an affinity for the biliary tract, has made possible the nonoperative visualization of the common duct, hepatic ducts, and when present, the gall-bladder. (Ann. Int. Med., Jan., 1955; E. M. Cohn, M. D., T. L. Orloff, M. D., D. M. Sklaroff, M. D., and J. Gershon-Cohen, M. D., Philadelphia, Pa.)

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Subacute Erosive Esophagitis

Use of the terms "peptic" and "regurgitant" in connection with the common, nonspecific form of esophagitis (subacute erosive esophagitis) has implied a definite etiology in a situation which does not seem yet to permit definitive thinking. Determination of the true basic, or primary, cause of subacute erosive esophagitis is particularly important because, to date, therapy directed at the acid-peptic influence has been ineffective in preventing its complications. Esophageal stricture and obstruction continue to be difficult therapeutic problems. The development of deep ulceration and perforation, although rare, is catastrophic. Sudden generalized erosion on occasion still leads to rapid exsanguination, and it is here that more properly directed prophylaxis is especially important. Because current nonsurgical methods for treating esophagitis, largely designed to subdue acid-peptic influence and to discourage transcordial reflux, have been largely impotent in discouraging these complications, it has become the practice in certain centers to treat selected cases by subtotal gastrectomy in an effort to attack gastric secretion more effectively; however, the results at Walter Reed Army Medical Center, and elsewhere, have been discouraging.

Previously, it has been found that the clinical facts do not support the thesis that acid-peptic corrosion is the primary etiologic factor in "peptic" esophagitis. A better understanding of the pathology of the disease may be expected to help in elucidating the importance of regurgitant corrosion. Pathologic investigations have been made almost exclusively on autopsy material, and it has not been possible to interpret these findings without a degree of uncertainty as to the part played by agonal and post-mortem autodigestion. The present study was made on transesophageoscopic biopsy specimens.

The histopathologic findings are interpreted as demonstrating a primary subepithelial disease, with surface erosion which is merely secondary to the underlying process. The erosions were characterized by absence of inflammation, and except when the specimens included an erosion, the surface was normal. The picture suggested that the inciting influence had been working beneath the epithelium.

Surface necrosis has been reported in some studies made on autopsy material, but none was found in the present biopsy investigation.

The histopathologic picture, together with the concept that reduction of tissue vitality is required before living tissue may be digested, has made it impossible to accept the hypothesis that the direct cause of "peptic" esophagitis is peptic activity, whatever secondary part it may play. A compelling argument to support the position is that, although "peptic" esophagitis is a rather common accompaniment of "peptic" ulcer and diseases which encourage transcardial reflux of gastric contents, it also is encountered in achlorhydria, following total gastrectomy, and as a sequel of stomach operations specifically designed to reduce gastric secretory activity. The protagonists of the corrosion theory have had to fit this observation into a scheme which had been proposed long before gastric surgery became a factor for consideration. This, necessarily, had to be done by extending the proposed causative factor from the acid-peptic influence alone to all gastrointestinal secretions which are foreign to the esophagus. Thus, the protagonists, themselves, demonstrated that bile and pancreatic juice are able to cause esophageal erosions and that there is enough regurgitation of these juices after total gastrectomy and duodeno-esophagostomy in the dog to produce esophagitis. Furthermore, it was shown in the dog that development of esophagitis is not altered by total excision of the acid-secreting portion of the stomach. Another point of seemingly irreconcilable confusion is thus added to the faltering theory that acid-peptic influence per se can produce esophagitis and gastroduodenal ulcer. Now, small intestine contents, which had meanwhile been proposed as an effective agent in counteracting acid-peptic influence in the treatment of "peptic" disease, are found to be an equally injurious influence.

The histopathology of subacute erosive esophagitis is reviewed in the light of biopsy specimens obtained from 61 patients. Evidences of disease were localized largely to the lamina propria mucosae. The epithelial layer itself was normal or merely secondarily diseased, either by inflammatory exudate extending upward from the lamina propria or by noninflammatory superficial exfoliation. Serial biopsy specimens, removed at variable intervals from 12 patients, showed the histopathologic pictures to be notably static.

Histopathologic information does not appear to conclusively support the contention that "peptic" esophagitis is caused by the corrosive action of regurgitated gastric juice, although, once mucosal vitality has been

impaired, secretory products may help to remove dying tissue. (Arch. Path., Jan., 1955; Lt Col E. D. Palmer, MC USA, Walter Reed Army Medical Center, Washington, D. C.)

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Objective Evaluation of Coronary Vasodilator Drugs

The administration of nitroglycerin in the treatment of angina pectoris has long been recognized as the most effective measure for the relief of the acute attack. Although the drug is also unexcelled when employed prophylactically prior to contemplated exertion, the relatively short duration of its action does not afford prolonged protection for the patient afflicted with this disease. For many years, therefore, the search has continued for a long-acting coronary vasodilator drug which, by its routine daily administration, may be capable of reducing the frequency and severity of anginal attacks.

Frequently, the clinical value of a coronary vasodilator drug has been estimated from its pharmacological action in animals or from its performance in uncontrolled studies in human disease; less often it has been appraised from carefully controlled analysis of the subjective sensation of pain in patients with angina pectoris. Some attempts to determine the effect of drugs on the severity and frequency of anginal attacks, occurring spontaneously or induced by exercise, have successfully removed or minimized the element of bias; but even the best of these methods employing the double blind technique with placebo and test materials has left much to be desired. Such procedures would be acceptable for assaying the vasodilator potency of drugs if pain represented a definite entity and reflected a fairly constant degree of coronary insufficiency in each patient. Obviously, this is not the case. Pain is of infinite variability and to date has not been accurately quantitated in man, either subjectively or objectively. Furthermore, even if such precise measurement were possible, pain could not reliably reflect the status of the coronary circulation or the degree of myocardial ischemia. In the laboratory, for example, patients who showed constant electrocardiographic alterations with each performance of a standard exercise test under carefully controlled conditions, have experienced no distress on some occasions and appreciable pain on others. Conversely, as Dock has pointed out, "a minute ischemic area in the myocardium may cause as severe discomfort as ischemia of a whole ventricle." By such methods of evaluation, drugs that only elevate the threshold for pain might be erroneously labelled as coronary vasodilator agents. A more accurate index of coronary insufficiency than that afforded by the subjective sensation of pain alone is, therefore, needed, if rational therapy by means of drugs is to be established in angina pectoris.

With this need in mind, the authors attempted to record and compare the ability of specific agents to modify the electrocardiographic response to standard exercise (Master two-step test) in carefully selected persons. To have validity, such investigation must include only those patients with coronary disease who exhibit, on repeated testing under identical conditions, a relatively constant positive response to a given amount of exercise. After carefully screening a large group of patients with coronary disease, sixty subjects were selected who appeared to fulfill the necessary criteria.

The findings of this investigation suggest that only 3 of the 16 drugs studied are worthy of continued clinical use as vasodilators in the management of angina pectoris. These drugs are glyceryl trinitrate, papaverine, and pentaerythritol (Peritrate) tetranitrate. Glyceryl trinitrate remains the drug of choice for treatment of the acute attack and for prophylaxis just prior to contemplated exertion. For many years, physicians have hoped that glyceryl trinitrate might be used in a preparation that would permit slow and steady absorption for prolonged action. Nitroglyn represents an admirable attempt to achieve this goal but from the authors' experience appears to fall far short of the mark. Even in large dosage, the release of the drug is too slow for satisfactory clinical response. The authors administered as much as $4/25$ of a grain (9.6 mg.) without observing significant modification of the exercise response in some patients who reacted dramatically to $1/150$ grain of the ordinary hypodermic preparation sublingually. On the other hand, pentaerythritol (Peritrate) tetranitrate, in many patients, behaves in a manner which would be expected of an ideal slow-acting preparation of glyceryl trinitrate. For prolonged protection, therefore, Peritrate appears to excel all other drugs tested. It is superior to papaverine because of the higher proportion of persons influenced favorably, the greater duration of action, and the expense of the latter in effective dosage. When papaverine is prescribed in cases of coronary disease, it would seem that a minimum oral dosage of 3 grains (0.2 gm.) 3 or 4 times a day is indicated. Considerably smaller doses, however, are effective parenterally.

Because of the current interest in Metamine, Paveril, Nitroglyn and Peritrate, comparative studies were undertaken with varying doses of each drug to determine the degree and duration of action of the respective agents as measured by the two-step test. Metamine and Paveril appeared to be of little value. Nitroglyn in doses which would seem alarmingly high (up to $4/25$ grain) showed only a slight to moderate effect on the exercise response during the 6-hour period following its administration. Smaller doses, on the other hand, were found to be either mildly effective or relatively inert. Peritrate alone was capable of preventing or markedly improving the abnormal exercise response in most of the patients studied. Its favorable action could be elicited for 5 hours or more after its administration.

The failure of ethyl alcohol to influence the electrocardiographic response to exercise, in all patients studied, appears to indicate that this agent is without coronary vasodilator action. Alcohol has long been known to be a depressant of the central nervous system capable of decreasing anxiety and promoting a sense of well-being. Because the administration of ethyl alcohol prophylactically may not only create a false sense of physical fitness but remove the protection afforded by angina, the danger of its employment prior to contemplated exertion should be recognized. Consequently, although it effectively relieves anginal pain through a sedative action, the fact that underlying myocardial anoxia remains unaltered by its use must not be overlooked. In these respects, morphine was found to act similarly. Ethyl alcohol appears to have value as a sedative for some patients with coronary disease and seems best taken during the leisurely hours at the end of the day. For the anginal attack, however, it must be considered a poor substitute for glyceryl trinitrate because, like morphine, it is completely ineffective in preventing or correcting coronary insufficiency.

Analysis of the results led to the following conclusions: (1) Glyceryl trinitrate (nitroglycerin) in therapeutic doses exerts a strikingly favorable effect on the response to exercise as recorded electrocardiographically. (2) Papaverine in the dosage of 1 to 2 grains (0.065 to 0.12 gm.) intravenously, or 3 to 8 grains (0.194 to 0.518 gm.) orally is effective in some patients in decreasing or abolishing the abnormal electrocardiographic response to standard exercise. Such benefit is not, however, observed with usual therapeutic doses of the drug. (3) Of all the agents tested, pentaerythritol (Peritrate) tetranitrate remains the most effective drug currently available for prolonged prophylactic therapy in angina pectoris. A 10 to 20 mg. dose affords protection for 4 to 5 hours as judged from the two-step test in the majority of patients studied. (4) The results obtained with triethanolamine (Metamine) trinitrate biphosphate, dioxylene (Paveril) phosphate and Nitroglyn (glyceryl trinitrate in specially coated granules) respectively, were in sharp contrast with those observed following the administration of Peritrate. Metamine was found to exert little or no significant effect on the electrocardiographic response to standard exercise. Paveril, in some cases, improved the exercise response but its action was not sustained and its effect was never striking even with massive dosage. Paveril appeared to be a much less potent drug than papaverine according to this method of testing. Nitroglyn, in spite of the logic behind its use, gave disappointing results. Dosage as high as 4/25 grain (9.6 mg.) was followed by only slight to moderate improvement in exercise response in about half of the patients tested; in the remainder, no significant effect was noted. (5) Aminophylline, Roniacol (beta-pyridyl-carbinol tartrate), tolazoline (Priscoline) hydrochloride, tetraethylammonium chloride, octyl nitrite, visammin (khellin), heparin and bishydroxycoumarin (Dicumarol)

appeared unimpressive when evaluated according to this method. (6) Ethyl alcohol, in 1 to 2 ounce amounts, consistently fails to influence the electrocardiographic response to exercise, although it does prevent or reduce the severity of anginal pain. Alcohol should, therefore, be classified as a rapidly acting sedative and should no longer be prescribed as a coronary vasodilator drug. Morphine is identical to alcohol in its effect on pain and in its failure to modify the exercise response. (7) Of the drugs tested, only glyceryl trinitrate, papaverine, and pentaerythritol tetranitrate (Peritrate) appear worthy of continued clinical use as vasodilators in the management of angina pectoris. (Am. J. M. Sc., Jan., 1955; H. I. Russek, M. D., B. L. Zohman, M. D., and V. J. Dorset, M. D., U.S. Public Health Service Hospital, Staten Island, N. Y.)

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Resuscitation of the Newborn Infant

This preliminary report is based on the treatment of a group of infants showing symptoms of atelectasis and hyaline membrane disease with a nontoxic detergent (alevaire) and a spreading factor hyaluronidase (alidase).

The infant was placed in a nebulized fog of alevaire and alidase, using 500 units (one vial) of alidase to every 500 cc. of alevaire. The nebulized fog was produced in an air lock or incubator by a suitable nebulizer. The infant was left in the fog of alevaire and alidase until all symptoms of respiratory difficulty disappeared.

Meyer and Palmer have demonstrated that there exists in the umbilical cord a free, polysaccharide acid of high molecular weight which they named hyaluronic acid. The reason for this concentration in the umbilical cord is not known. It is possible that this concentration of hyaluronic acid in the umbilical cord may be an effective barrier to the expansion of the alveoli of infants after delivery by providing a strong cementing or mortar-like action of this substance between the alveolar cells of the lungs of the fetus. Study is proposed of the cords of newborn infants, particularly those showing difficulty in expansion, to determine whether there is any correlation between this difficulty and the content of the hyaluronic acid in the cords of such infants.

The nursing personnel have commented upon the rapidity with which the condition of infants processed in a nebulizing chamber with a detergent such as alevaire in combination with a spreading factor such as alidase, becomes "good" and the infants can be transferred from such a chamber to an incubator in comparison with those processed only with a mist of water. Clinically, there appears to be quite a contrast.

A detergent such as that described by Miller and later by Ravenel, for nebulization, provides an ideal vehicle for a spreading factor such as hyaluronidase (alidase) to allow the detergent the greatest possible coverage in the atelectatic lung. The clinical results in this study bear out this possibility. Laboratory studies on the lungs of newborn infants, processed with alevaire and alidase, will be made and reported.

The detergent alevaire is composed of 5% glycerine, 2% sodium bicarbonate, and 0.125% alkylaryl polyether alcohol of the oxyethylate tertiary octylphenol-formaldehyde polymer. This solution has been found to be non-toxic in concentrations 250 times greater than that necessary to produce hemolysis with other detergents.

Hyaluronidase is a specific enzyme which hydrolyzes hyaluronic acid, a gel which serves as a cement between cells and acts as a barrier to the diffusion of invasive substances. Upon hydrolyzation of hyaluronic acid, the viscosity of the cementing gel becomes markedly lessened, resulting in a reduction of the tissue barrier which persists for approximately 48 hours. Theoretically, the neutralization of any barrier in the atelectatic lung of the newborn infant in order to enable that lung to expand is a desired goal. Clinically, in the treatment of atelectasis, rapid expansion occurs when a suitable detergent such as alevaire, is employed in nebulization with hyaluronidase. Hyaline membrane disease of the newborn infant is favorably influenced clinically by treatment with a detergent such as alevaire in nebulization with hyaluronidase.

The clinical results from the use of a combination of a detergent and a spreading factor in the treatment of atelectasis and clinical hyaline membrane disease in this series warrant a further trial of this method of therapy as an aid to pulmonary expansion in the resuscitation of the newborn infant. (Anesthesiology, Jan., 1955; A. Bloxsom, M. D., Baylor University College of Medicine, Houston, Tex.)

* * * * *

Recovery of Tubercle Bacilli from Mouth Washings of Tuberculous Patients

The frequency with which living tubercle bacilli occur about the site of dental procedures is a matter of practical importance to dentists, dental hygienists, and dental technicians who work with tuberculous patients. The organisms have been recovered from swabs or washing of the lips, gingiva, teeth, and oral mucous membranes of sanatorium patients by a number of investigators, but the reported frequency of their occurrence varies greatly, depending on the stage of activity of the disease, the method of obtaining test materials, and the technics used to demonstrate tubercle bacilli.

In an effort to assess the degree to which tubercle bacilli occur at the operative site, smears and cultures were prepared of a sample of water syringed over the dental surfaces during the course of 300 consecutive dental procedures performed on 111 tuberculous patients treated in a sanatorium dental clinic. Each of these patients had presented roentgenographic evidence of active pulmonary tuberculosis prior to admission to the hospital, and tubercle bacilli were recovered from the sputum of each at some time during the course of hospitalization. Mouth washes were taken when the patients first entered the dental clinic. No distinction was made as to whether they had natural or artificial dentition or were totally lacking in teeth, and no changes were made in their normal oral hygiene habits. The distribution of dental operations performed on this group of patients was as follows: oral examinations, 81; operative dentistry, 92; minor oral surgery, 21; prosthodontic, 76; oral prophylaxis, 2; and periodontal treatment, 7. All of the 111 patients had mouth washes taken on their original visit; 27 had mouth washes taken on two occasions and 46 on more than two occasions.

The experience in this study indicates that the hands of dentists and the instruments they use may be contaminated by tubercle bacilli during the examination and treatment of dental patients who have active pulmonary tuberculosis. This is true, not only if droplets of sputum expelled from the oropharynx in the act of coughing are deposited on the examiner or his instruments, but also if sufficient contact is made with fluids in the anterior mouth. The dentist, in these circumstances, is working in a milieu containing tubercle bacilli. He should be well aware of this fact and should protect himself and his assistants as much as possible by appropriate hygienic measures. The dental procedures should be conducted with aseptic precautions. Hands, instruments, and utensils should be decontaminated adequately after each patient has been treated. It may be possible, with the aid of current tuberculostatic agents, to temporarily inactivate acid-fast organisms in the oral cavity before or during the course of treatment. (J. Am. Dent. A., Jan., 1955; J. N. Abbott, M.D., A. T. Briney, D.D.S., and S. A. Denaro, M.S., VA Hospital, Batavia, N. Y.)

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Tumors of the Salivary Gland

In clinical medicine, tumors of the salivary glands are regarded as uncommon, usually benign lesions, and most often occurring in the parotid. These views are correct, such tumors constituting only about one percent of all human neoplasms and being benign in about seventy-five percent of cases.

Tumors of the major salivary glands have for some time been a subject of special interest to the Department of Plastic and Maxillofacial Surgery of the University of Texas, Medical Branch. As a result, a considerable number of surgical specimens have been submitted to the Department of Pathology. A review of one hundred and eighty of these tumors has recently been completed. This study included a review of the gross pathology, the original microscopic sections, freshly stained sections cut from the original paraffin blocks, and in some instances, additional blocks of tissue taken from the formalin-preserved gross specimens. In some of the tumors, not readily identifiable in the hemotoxylin and eosin sections, special stains were employed. The special staining procedures found most helpful were the Masson's trichrome stain and Schiff's periodic acid stain.

The principal achievement of this study was the correlation of the various histologically distinct types with pertinent clinical data from the hospital records and from follow-up studies conducted by the University Tumor Clinic. This data has been tabulated and is presented.

One of the secondary objectives of this study was to provide both the surgeon and the pathologist with a simple yet accurate classification designed to convey a maximum of histopathologic data without the use of complex, and often ambiguous, descriptive terminology. Because the most important question the surgical pathologist is called upon to answer is the question of malignancy in a given lesion, he should render his diagnosis in terms universally recognized as connoting benignancy or malignancy. It is usually possible for the pathologist to determine whether malignant changes exist in a given lesion, therefore, there seems little justification for the employment of terms suggesting a condition of intermediate or semi-malignancy. As it is now generally recognized that the great majority of neoplasms primary in the salivary glands arise from the epithelial components, it would seem most logical to classify these tumors primarily as either adenomas or carcinomas. Simple, universally acceptable descriptive prefixes and appendages may be used to convey a very accurate picture of the histopathology.

Epithelial tumors arising in the salivary glands are: (1) Adenomas, (a) simple adenoma, (b) complex adenoma, and (c) adenoma with lymphoid stroma; and (2) Carcinomas, (a) muco-epidermoid carcinoma, (b) adeno-carcinoma, (c) epidermoid carcinoma, and (d) undifferentiated carcinoma.

The basic classification and discussion of the various histologically distinct tumors encountered in this series, is given under the two foregoing major categories.

For all practical purposes, salivary gland adenomas can be considered as completely benign lesions of epithelial origin. Like adenomas arising elsewhere, they occasionally eventuate in malignancy, though it is estimated that less than five percent of carcinomas occurring in these structures develop from a pre-existing adenoma. The term "complex

adenoma, " which Foote has proposed to replace the time-honored but meaningless term "mixed tumor, " is used throughout this article and connotes a benign neoplasm. This is by far the most common neoplasm arising from salivary gland tissue.

These lesions are of clinical importance because of their well-known tendency to recur and because of their relation to the facial nerve when they occur in the parotid. The reason for such recurrence is generally thought to be due to inadequacy of the primary excision. Despite the deceptive appearance of complete encapsulation, microscopic projections of tumor often extend beyond the apparent limits of the adenoma and into the normal gland tissue. Thus, these tumors are "shelled out, " as is so easily accomplished in most instances, and multiple minute foci of tumor are left behind to develop slowly, often manifesting themselves many years later. The close proximity of the facial nerve to the parotid gland renders adequate excision of these tumors (especially when recurrent) difficult in this location. The much higher recurrence rate, usually reported for complex adenomas arising in the parotid gland than in such tumors in other salivary glands, is probably related to this fact.

Simple adenomas of either acinic cell or ductal cell origin are usually smaller than the complex adenomas, show fewer extensions beyond the apparent periphery and, for this reason, are less apt to recur following local excision.

Carcinoma is seen in about twenty percent of all tumors in the parotid gland and about thirty percent of all tumors in the submaxillary gland. Lambert has reported an even higher incidence of malignancy in tumors arising in "ectopic foci" of salivary gland tissue. The biologic properties of salivary gland carcinomata vary from certain very slow-growing, but locally invasive, mucoepidermoid carcinomata to very rapidly growing, widely metastasizing undifferentiated carcinomas and malignant lymphoepitheliomas. Carcinomas arising in these glands are best classified on a basis of the histological features and each type tends to follow a fairly well recognized clinical course. Prognosis is well correlated to the type and the degree of differentiation of the carcinoma. Most carcinomas of salivary gland tissue are of the adenocarcinoma type and arise from the ductal epithelium. A rare form, the acinic cell adenocarcinoma, has been described by Buxton (1953) and reported in some detail by Godwin, Foote, and Frazell (1954). This unique carcinoma is thought to arise, at least in some instances, from a pre-existing acinic cell adenoma, and tends to follow a rather benign course. Two such tumors were encountered in the present series.

Carcinoma arising in the parotid gland usually demands a radical surgical attack, and preservation of the facial nerve should not be considered except in certain of the well differentiated examples of mucoepidermoid carcinoma and in the acinic cell adenocarcinomas. Radical

neck dissection probably should accompany the operation for cylindroma and epidermoid carcinomas in general. In the undifferentiated carcinomas and malignant lymphoepitheliomas, there is reason to believe that radiation therapy may be preferable in most instances to a surgical attack.

Most primary carcinomas of the submaxillary gland are of the cylindroma type, and this location is more favorable to radical en bloc resection and node dissection than is the parotid gland area. Post-operative irradiation may be indicated in the more advanced cases, especially where the histological diagnosis indicates a fair degree of radiosensitivity. (Texas Reports on Biology and Medicine, Vol. 12, No. 4, Winter, 1954; J.K. Johnson, and J.H. Childers, University of Texas, Medical Branch, Galveston, Tex.)

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Transmetatarsal Amputation for Gangrene

The management of gangrene and infection of the lower extremities, associated with arteriosclerosis and diabetes, has made important strides since the advent of antibiotics. With the control of most foot infections, a more conservative treatment of the necrotic lesions per se has become possible.

With the introduction of the transmetatarsal amputation into the surgical armamentarium, there was good reason to believe that the incidence of major amputations could be reduced. The author's experience at Montifiore Hospital lends support to this belief. During the period 1949 through 1953, transmetatarsal amputation represented 30% of the total major amputations. This article discusses, in the light of this experience, the criteria for the selection and the results of transmetatarsal amputation in patients with gangrene, ulceration, and infection of the toes, associated with obliterative arterial disease. This study is based on an experience with 59 cases.

The indications for transmetatarsal amputation are based primarily upon evaluation of local factors. In patients with marked arterial insufficiency, it may be difficult to forecast the outcome of this amputation. With experience, however, in most cases the indications can be arrived at by adhering to the evaluation of local factors. Similar criteria are valuable guides in the choice of the other levels of amputation for ischemic gangrene of the lower extremities. Such criteria have recently been reviewed in the light of an experience of the P. V. D. Service based upon 455 major amputations performed from 1939 to 1954.

Transmetatarsal amputation for ischemic gangrene can be credited with reduction in the incidence of higher amputations. Proper indication and careful surgical technique are essential if a high percentage of success is to be achieved. From the data, it appears that the success of a transmetatarsal amputation for ischemic gangrene of the toes, ulceration and

infection, depends upon several factors, the most important being: (1) well-demarcated lesions; (2) well-controlled infection; (3) adequate collateral circulation at the amputation level; (4) selection of proper time for operation; (5) careful and adequate preoperative asepsis of the skin, and (6) careful atraumatic technique.

McKittrick and associates, in their series of 215 cases, reported 155 (72%) healed at the time of their hospital discharge. Later, follow-up indicated that 67% of the entire group had satisfactory results. Warren and associates, reporting on 43 cases, showed an incidence of 62.8% successful healing. Likewise, late results of these cases showed that the majority of the patients had a useful foot and that only 3.7% required higher amputation.

In the present series, healing occurred in 73.9% of the cases with the closed procedure, and in 90% of the cases with the open procedure. Over-all healing occurred in 77% of the cases. The difference in the percentage of the successful results between the two groups is a reflection of a better arterial supply in the latter cases rather than of other factors. In this connection, it is of interest to note that all the patients had foot lesions associated primarily with arterial insufficiency. Similar lesions due to infection, osteomyelitis, and neurogenic disturbances in the presence of good arterial circulation, should be distinguished from those due to ischemia of the tissues. In the former cases, a transmetatarsal amputation usually results in prompt healing. Thus, McKittrick and associates in 70 cases had only one failure, and Warren and associates reported 8 cases with no failure. A correct interpretation of the results of transmetatarsal amputation is, therefore, important in order to make a clear distinction between these two types of foot lesions.

Analysis of the clinical findings in the 13 cases of this series resulting in failure indicates that, notwithstanding apparent demarcation of the lesions, marked blanching of the forefoot on elevation, and sharp difference in skin temperature between the forefoot and midfoot were present in 10 cases. In addition, severe rest pain, unrelieved by narcotics, was present in all these patients. While, in the face of such signs of advanced ischemia of the tissues at the metatarsal level, one might have an occasional success, these signs should be regarded as contraindication to the procedure.

The over-all results obtained in this series are gratifying and recommend transmetatarsal amputation as a limb-salvaging procedure. A follow-up study showed that 74% of the patients had satisfactory results. Although the hospital stay of many of these patients was relatively long, their complete rehabilitation fully justified the efforts surrounding their treatment. The advantages of this procedure cannot be overemphasized, especially in this old-age group of patients in whom a higher amputation usually results in permanent invalidism. (Arch. Surg., Jan., 1955; H. Haimovici, M. D., Montifiore Hospital, New York, N. Y.)

Radiobiology Course

Announcement has been made by the Armed Forces Special Weapons Project of a course for medical and medical service corps officers in Radiobiology, to be given at Reed College, Portland, Ore.

The first part of the course, extending from the first part of August to the latter part of September 1955, will consist of a general review of basic mathematics and physics. The second part of the course, commencing in September 1955 and ending in January 1956, will consist of academic instruction in Radiobiology. This will include instruction in nuclear physics, biophysics, human genetics, radio-chemistry, and the biological effects of ionizing radiation. These two parts will be given at Reed College, Portland, Ore.

The course at Reed College will be followed by a short course of approximately two weeks at Sandia Base, Albuquerque, New Mex., and 60 days at Oak Ridge, Tenn., in the Oak Ridge Institute of Nuclear Studies and the Oak Ridge National Laboratory.

The objectives of this training are to provide medical and medical service corps officers with sufficient technical background to serve as Staff Advisors in all phases of the medical aspects of atomic defense; as advisors in the medical problems associated with the use of atomic reactors for power purposes; and as instructors in the various service training centers in this specialty.

Continuing progress in the field of nuclear energy and atomic research means an increasing need for medical officers and medical service corps officers trained in radiobiology. One nuclear powered submarine has been launched and several more will be launched within the next few years. Nuclear powered surface ships are planned in the near future. There are land based prototypes of the ship reactors at several sites at present, and more of these may come into operation within the next few years. The Naval Reactor Program needs trained medical and medical service corps officers to fill new billets as they develop.

The Navy Medical Department also has six clinical radioisotope laboratories and is conducting studies in the field of radiobiology at several research laboratories.

The course sponsored by the Armed Forces Special Weapons Project in Radiobiology will provide training needed for the types of billets described. Requests are desired immediately from medical and medical service corps officers of the regular Navy and the Naval Reserve in the ranks of Commander and below, who are interested in this field of study. In accordance with BuMed Instruction 1520.7 of 4 August 1954, each request for this course must contain the applicant's agreement to serve for a period of two (2) years after completion of the course or for two (2) years following completion of any obligated service whichever is longer.

Requests must reach BuMed prior to 15 May 1955, and may be made by dispatch if the time element involved requires such action. Dispatch requests must be confirmed by a following letter. (S. W. D. Div, BuMed)

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Medical Deep Sea Diving Technic

The attention of medical department enlisted personnel and officers is invited to the news item on page 30 of the U. S. Navy Medical News Letter, Vol. 25, No. 3 of 4 February 1955, in regard to training in medical deep sea diving technic.

The requirements, outlined in the Catalog of Hospital Corps Schools and Courses, for hospital corpsmen to enter this program should include the stipulation that prior qualifications as Salvage Diver or Diver, second class, are prerequisites. Reference should be made to the Catalog of U. S. Naval Training Activities and Courses, under the management control of the Bureau of Naval Personnel (NavPers 91769-B), in addition to the Catalog of Hospital Corps Schools and Courses.

A future change in the Catalog of Hospital Corps Schools and Courses will contain the stipulation that prior qualifications of Salvage Diver or Diver, second class, are prerequisites for training in medical deep sea diving technic.

BuPers Instruction 1540.17 of 14 July 1953, contains information as to training available to qualify personnel as Divers, second class. (Hospital Corps Training, BuMed)

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American College of Physicians

The American College of Physicians will present a postgraduate short course in "The Early Detection and Prevention of Disease," at the American College of Physicians Auditorium, 4200 Pine St., Philadelphia, Pa., 28 March to 1 April 1955, inclusive. The program will be directed by John P. Hubbard, M.D., F.A.C.P., and is designed for the physician who wishes to review existing knowledge and methods available for the measurements of health, the maintenance of health, the detection of disease in its incipency, and the prevention of the recurrence or complications of certain diseases.

Medical officers interested in attending the above course should forward requests to the Chief of the Bureau of Medicine and Surgery. Authorization orders only can be provided, however, the required registration fee will be reimbursed to those approved for attendance. The fee for ACP members is \$30.00. That for non-members is \$60.00. (ProfDiv, BuMed)

Retirement Points Authorized for Military Medicine
Section, Scientific Assembly - A. M. A.

The Chief of Naval Personnel has authorized the awarding of one retirement point credit to eligible Naval Reserve officers of the Medical Corps on inactive duty for each of the three sessions of the Military Medicine Section of the Scientific Assembly of the American Medical Association attended at Atlantic City, N. J., 7, 8, and 9 June 1955.

A place for registration for this purpose will be made available to Naval Reserve Medical officers at the site of the three sessions. (ResDiv, BuMed)

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Applicants' Physical Examination for Membership
in the Navy Mutual Aid Association

The Navy Mutual Aid Association greatly appreciates the services rendered by medical officers in examining and reporting upon the physical fitness of applicants for membership in the Association. After a review of the reporting requirements relative to the medical examination of applicants, there has been found a means, as given below, whereby the needs of the Association can be fulfilled and the time and effort expended by medical officers in this service will be reduced.

In the event a signed copy of a completed Standard Form 88 is available in the files of the ship or station, a certified copy of such report is acceptable in lieu of Part III - Medical Examiners Certificate of the Application for Membership; Provided, the Standard Form 88 has been executed within 60 days of the effective date of application.

A completed and signed Standard Form 88 will likewise be acceptable in lieu of Part III of the Application in the event the preceding paragraph does not apply. In such cases, items 44, 46 through 50 and 60 through 72 of the Standard Form 88 need not be executed and the signature of but one medical officer is necessary.

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U.S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

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From the Note Book

1. Rear Admiral D. W. Ryan, DC USN, Assistant Chief for Dentistry and Chief, Dental Division, Bureau of Medicine and Surgery, will be relieved of his present duties in early March 1955, by Rear Admiral Ralph W. Malone, DC USN, presently the Inspector General, Dental. Admiral Ryan will relieve Rear Admiral Herman P. Riebe, DC USN, as the Inspector, Naval Dental Activities, Pacific Coast, in April 1955.

Admiral Riebe will report to the Bureau of Medicine and Surgery in May 1955, for duty as Inspector General, Dental. (TIO, BuMed)

2. Dr. W. V. Charter, Director of the Medical Statistics Division, Bureau of Medicine and Surgery, represented the Navy at the International Conference for the Seventh Revision of the International Lists of Diseases and Causes of Death, sponsored by the World Health Organization, held in Paris, France, February 21 - 26, 1955. (TIO, BuMed)

3. Dr. Sara G. Krout, recently selected as a Commander, is the first woman to have achieved this rank in the Naval Dental Corps Reserve in the history of the Navy. Commander Krout was commissioned in the Dental Corps of the U.S. Navy as a lieutenant on February 25, 1944. She was ordered to active duty on June 1, 1944, at the Naval Training Center, Great Lakes, Ill., where she remained until separated from the service in January 1946. She was the first woman commissioned in the Navy Dental Corps. Since the war, Commander Krout has been an active member of the Evanston Dental Unit of the Naval Reserve headed by Capt. Paul Wells. (TIO, BuMed)

4. "The Late Effects of Internally Deposited Radioactive Materials," a Bureau of Medicine and Surgery scientific exhibit, was shown at a meeting of the American Academy of Orthopedic Surgeons held in Los Angeles, Calif., January 29 - February 3, 1955. This exhibit presents a summary of the clinical, histopathological, auroradiographic, roentgenographic and radio-chemical findings of four recent investigations of the late effects of internally deposited materials conducted at the Harvard Medical School, the Argonne National Laboratory, the Massachusetts Institute of Technology, the Finsen Institute in Copenhagen, Denmark, the National Naval Medical Center, Bethesda, Md., and the Universities of Utah and Rochester. (TIO, BuMed)

5. The Bureau of Medicine and Surgery publication, "The Care of Your Teeth and the Prevention of Dental Disease" (NavMed P-5039) is now available for distribution to all naval activities through District Printing and Publications Offices. This pamphlet was prepared by dental officers from the Naval Dental Clinic, Naval Gun Factory, Washington, D. C., and the

Naval Dental School, National Naval Medical Center, Bethesda, Md. This publication emphasizes the importance of tooth brushing and nutrition in the prevention of dental disease. It is intended to supplement oral hygiene treatment by the dental officer and is not to receive mass distribution. A unique feature is a prescription flyleaf where instructions and medicaments can be prescribed by the dental officer. (TIO, BuMed)

6. A new insecticide, DDVP (Dimethyl Dichloro Vinyl Phosphate) is more potent in killing insects and less toxic to humans and farm animals than many modern economic poisons. It was discovered by research scientists at the Savannah, Georgia, laboratory of the Public Health Service's Communicable Disease Center.

DDVP's importance lies in several characteristics which make it different from other insecticides in use today. It may prove to be of significant agricultural as well as public health importance. (Dept., H. E. W.)

7. The first major revision of foreign quarantine regulations since 1946 has been completed by the Public Health Service. The revision, which became effective January 10, affects some 270 seaports, airports, and border entry points where the regulations are administered by medical officers and inspectors of the Division of Foreign Quarantine, Public Health Service. The regulations deal chiefly with six quarantinable diseases: smallpox, yellow fever, cholera, plague, typhus, and relapsing fever. Changes in the regulations reflect recent advances in international reporting of disease outbreaks. They also reflect the improvement of health practices on such matters as food and water sources for ships and aircraft, and disposal of waste. (Dept., H. E. W.)

8. On January 21, 1955, two Egyptian scientists, Dr. Fathy Abd El Sattar Sallam, Department of Internal Medicine, University of Cairo, and Dr. Kamal El Din Abd El Aziz Mahmoud, Department of Physics, University of Cairo, arrived in Washington, D. C. to participate in the "Atomic Power for Peace" program. They will be joined shortly by other Egyptian scientists comprising the first group of trainees who will receive their initial course of instruction at the Radioisotopes Center, National Naval Medical Center, Bethesda, Md.

These Egyptian scientists will study the use of radioisotopes. It is planned to expand the Egyptian project to include the use of radioisotopes in other fields such as agriculture and industry. Following the initial course of instruction at the Radioisotopes Center at the National Naval Medical Center, the second phase of their study will be at Oak Ridge, followed by special training at various American universities and government agencies. (TIO, BuMed)

9. Information has been received from the Naval Examining Center, Great Lakes, Ill., that dental technicians, taking the examination for advancement in rating, are not writing the word General, Prosthetic or Repair on the examination answer sheet. This makes it difficult to score the paper properly. It is desired that all Fleet, Force, District, and Staff Dental officers give this information wide dissemination. (TIO, BuMed)
10. The public is rapidly becoming aware that Retrolental Fibroplasia is, in large measure, preventable. If currently available information is disregarded and an infant becomes blind, the burden that lies on the physician and the hospital is unpleasant to contemplate. The conclusion is obvious that discriminate and limited use of oxygen in premature infants is now mandatory. (J. Pediat., Feb., 1955; Editorial)
11. Abrasive surgery is the method of choice for treatment of pitted scars caused by acne or smallpox. The method is also effective in removing nevi, post-traumatic scars, and superficial tumors such as sebaceous adenomata. (Medical Annals, District of Columbia. M.M. Robinson, M.D.)
12. A report indicates that on 31 January 1955, there were 31 civil service physicians on board at infirmaries and dispensaries of 12 industrial type activities: 7, BuShips; 3, BuOrd; and 2, S&A. Twenty-nine physicians were on a full time basis and 2 were on half time basis. This procedure has permitted the reassignment of 15 naval medical officers. (Stat., NavMed, Feb., 1955)
13. Myocardial infarction in pregnancy is extremely rare. An article reviewing the reports in the literature, reporting an additional case and discussing the management, appears in Am. Heart J., Jan., 1955. N.A. Antonius, M.D., P.A. Izzo, M.D., G.W. Hayes, M.D., and C.R. Walsh, M.D.
14. A discussion of hereditary hemorrhagic telangiectasia, with a review of cases with gastrointestinal involvement, is presented in Arch. Int. Med., Jan., 1955; G.A. Williams, M.D., and I.B. Brick, M.D.)
15. At present, there are only two indications for the clinical use of N-allyl-normorphine: serious respiratory depression from morphine and related drugs, and the detection of addiction. (Anesthesiology, Jan., 1955; R.A. Huggins, Ph D., and J. H. Moyer, M.D.)
16. On 15 December 1954, the Artificial Limb Facility at USNH, Oakland, Calif., was designated as "Navy Prosthetic Research Laboratory." (BuMed)

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Retirements

CAPT John Matthew Bachulus, MC USN
LT Bernadine Adam Castrodad, NC USN
RADM Sterling Smith Cook, MC USN
CAPT Frederick W. Farrar, MC USN
LCDR Floyd S. Haslam, MSC USN
LT Ancil B. Smith, MC USN
CAPT Gerald W. Smith, MC USN
LTJG James Francis Stuart, MSC USN

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BUMED INSTRUCTION 6260.4

24 January 1955

From: Chief, Bureau of Medicine and Surgery
Chief, Bureau of Supplies and Accounts
To: All Ships and Stations

Subj: Toxic materials; controlling issue and use of

Ref: (a) BuMed Instruction 6200.5 (Carbon tetrachloride and other
chlorinated hydrocarbons)

The purpose of this Instruction is to control the issue and usage of the
more highly toxic chemicals and solvents at point of use level.

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BUMED NOTICE 6710

4 February 1955

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical/Dental Personnel
Regularly Assigned

Subj: Antibiotics; extension of potency dates

Ref: (a) Medical and Dental Materiel Bulletin (MDMB) Edition No. 50
of 1 January 1955

This Notice provides authority to extend the potency dates of certain
antibiotics.

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BUMED NOTICE 6820

11 February 1955

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical/Dental Personnel Regularly Assigned
Subj: Psychological First Aid in Community Disasters, NavMed P-5037; distribution of
Encl: (1) Subject publication

This Notice provides addressees with copies of "Psychological First Aid in Community Disasters" for use in training programs.

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BUMED INSTRUCTION 6820.1B

11 February 1955

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical/Dental Corps Personnel Regularly Assigned
Subj: Subscriptions to professional periodicals

This Instruction provides information regarding subscriptions to professional medical, dental, and technical periodicals.

BuMed Instructions 6820.1A and 6820.6, and BuMed Notice 6820 of 25 May, 1954 are canceled.

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BUMED NOTICE 12250

14 February 1955

From: Chief, Bureau of Medicine and Surgery
To: Activities Under the Management Control of BuMed
Subj: Ungraded (non-IVb) positions; report on maintenance review of
Ref: (a) NCPI 250.3-5
(b) Section 1310 of Public Law 253 (Whitten Amendment)
(c) BuMedInst 12250.1 of 2 February 1953
(d) OIR Notice 12250 of 10 Dec 1954

This Notice desires a report on the results achieved under the regular maintenance review of ungraded positions and to provide instructions concerning the special review of Group IVa positions.

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BUMED INSTRUCTION 4247.1

18 February 1955

From: Chief, Bureau of Medicine and Surgery

To: All Naval Hospitals and the National Naval Medical Center

Subj: Federal taxes imposed under Section 4251, Internal Revenue Code of 1954, applicable to communication services financed by other than appropriated funds

Ref: (a) NavCompt Inst 4247.1 of 24 Jan 1955

This Instruction informs addressees of the content of reference (a) which restates the application of section 4251, Internal Revenue Code of 1954, to communication services financed by other than appropriated funds.

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PREVENTIVE MEDICINE SECTION

Communicable Disease Control

Influenza

Influenza B has been recognized during December 1954 and January 1955 in widely scattered areas.

Weekly Communicable Disease Summaries of the U. S. Public Health Service National Office of Vital Statistics report that the disease has been identified in England, Wales, Northern Holland, Alberta, Canada, Minnesota, Illinois, and Washington, D. C. Outbreaks of acute respiratory disease, which have not yet been identified as to etiology and may prove

to be influenza B. have been reported in Arkansas, California, New Jersey, New York, and North Carolina.

The first small outbreaks reported were in England and Wales during December. Naval Medical Research Unit No. 4 at Great Lakes, Illinois, then reported isolation of an influenza B virus from a single case on December 31, 1954. This virus was very closely related to the influenza B viruses recovered during a minor outbreak of influenza B in recruits during March and April of 1954.

In the Summary for the week ending January 15, 1955, absenteeism due to acute respiratory disease in some junior high schools in the vicinity of Washington, D. C., was reported to be as high as 20%. Newspaper articles have also reported outbreaks of "virus X" disease in several areas on the east coast with some schools being closed because of the high percentage of absentees. The National Microbiological Institute, Bethesda, reported isolation of three strains of influenza B similar to the Great Lakes 1954 strain from patients ill during the third week of January 1955.

Later reports received in the Bureau of Medicine and Surgery, indicate that further identification of influenza B, by both virus isolation and serological methods, has been made at Great Lakes and also at the National Institutes of Health. Hospital admission rates for recruits at Great Lakes because of acute respiratory infections have increased during the period in which influenza identification has been reported. Admission rates for other populations at Great Lakes and for other Navy recruit training stations during this period have not shown a similar increase. In this connection, it may prove of interest that controlled studies on influenza vaccines are being carried out at Great Lakes by Naval Medical Research Unit No. 4 and the Commission on Influenza of the Armed Forces Epidemiological Board.

Clinical cases are reported as being comparatively mild and characterized by fever of from 48 to 72 hours duration, sore throat, headache, and cough.

Laboratory confirmation of the 1955 strains of influenza B may be difficult. The experience of Naval Medical Research Unit No. 4 with the 1954 strains of influenza B indicates that serological tests employing as antigens an older strain of influenza B, such as the Lee strain of 1940, may fail to demonstrate diagnostic antibody increases that can be demonstrated when the 1954 virus is employed in the test. Difficulties have been encountered also in isolation of the virus in some areas.

* * * * *

Smallpox in France

In mid-January, a small outbreak of smallpox was reported in the city of Vannes, on the coast of Brittany in northwest France. By the end

of January, the outbreak had assumed more serious proportions in Vannes, with 67 cases and 15 deaths, and had also spread to the cities of Rennes, Nantes, Lorient, and Brest. One million persons have been vaccinated in this area, but further spread can be expected before the epidemic is controlled.

On February 5, the Commander-in-Chief, U. S. Air Forces in Europe, reported two cases at St. Die in northeast France, in the vicinity of Air Force Bases. Immediate action was taken to limit nonessential travel in affected areas; to reimmunize all Air Force personnel located in France; to ensure that all Air Force personnel in the balance of Europe had been successfully immunized against smallpox within the past year; and to require that personnel entering or leaving France had been successfully immunized against smallpox in the immediate past.

By agreement, the Army, Navy, and Air Force have now issued instructions that military personnel, their dependents, and civilians traveling under the cognizance of the Armed Forces must have been successfully vaccinated against smallpox subsequent to January 1, 1955, for travel to, through, or from France. Military aircraft and Military Sea Transportation Service ships will require properly certified immunization certificates prior to allowing embarkation for or from France.

It will be noted that the word "successfully" was used in connection with these requirements. This requires that a vaccine of known potency be used and that observation after vaccination be sufficient to allow determination that one of the three following reactions has occurred: immediate (of immunity), accelerated (vaccinoid), or typical primary vaccinia. Revaccination must be continued until a reaction occurs, in the event the first trial does not result in a reaction. Details concerning the criteria for potency of the vaccine and the types of reaction can be found in the Article 22-22, Manual of the Medical Department.

* * * * *

Industrial Medicine

The 1955 Industrial Health Conference

The 1955 Industrial Health Conference will be held in Buffalo, New York, from 23 April to 29 April 1955, inclusive. This conference is sponsored jointly by the American Industrial Hygiene Association, American Governmental Industrial Hygienists, the American Association of Industrial Nurses, the American Association of Industrial Dentists, and the Industrial Medical Association. It is one of the most important educational meetings of the year for personnel employed in the industrial health program of the Navy.

This conference affords unsurpassed opportunity for the presentation and discussion of new problems in the field of industrial health which have arisen incident to rapid technicological progress. Recognized leaders in the field of industrial health will be present representing major private industries in the United States and Canada. There will be discussions of mechanisms believed to be most effective in lowering sick day absenteeism, in preventing lost time accidents, and in improving employee morale, all of which are applicable in lowering the over-all cost of industrial production and in maintaining the readiness of the Navy. In order to have an adequate and progressive industrial health program in the Navy, it is considered highly desirable that naval and civilian personnel concerned with the industrial health program attend conferences of this type. Such participation is particularly pertinent at this time when an effort is being made to integrate civilian physicians into the Navy's industrial health programs and to maintain and, if possible, improve our present low rates of industrial sickness and accidents.

The Bureau of Medicine and Surgery has recommended that the various management bureaus notify industrial activities under their management control of the desirability of attendance at this important conference, and that orders to attend be issued to industrial medical officers, industrial hygienists, and industrial nurses to the extent that they can be spared for such purpose and travel and per diem funds can be made available. Attention was invited to the fact that since this conference is sponsored by non-Federal organizations, orders for attendance must be processed in accordance with SecNav Instruction 7200.2 of 16 October 1952.

* * * * *

Cancer as an Occupational Health Hazard

Cancer is likely to appear during the middle years of life, man's most active and productive period when his earning capacity should be greatest. Each year 113,000 man-years, equivalent to nearly \$4000,000,000, are lost in industry because of cancer.

Although cancer was observed by the early Egyptians, the first recorded observations on carcinogenic agents were made in 1775 by Sir Percival Potts, who noted that people working with tar commonly developed cancer of the skin. He further suggested that tar acted in some manner as a causal agent.

Recent observations on the high incidence of cancer of the lip in fishermen who, in repairing their nets, are in the habit of holding between their lips twine that has been treated with tar may be significant. Yamagiwa painted tar on a rabbit's ear every day for 6 months in 1915 and produced cancer of the skin. People exposed to excessive sun rays over a long period

of time may develop cancer of the skin. The same holds true for x-ray and radium workers. Ingestion of radioactive luminous paint may produce bone cancer. It has been known for a long time that chimney sweeps and mule skimmers develop cancer of the scrotum. Aniline dyes ingested or inhaled may cause cancer of the bladder. Also, there is much clinical evidence to support the belief that chronic irritation is an etiologic factor in causing cancer. Noteworthy is the increase in cancer of the lip in people who are pipe smokers and in persons with chronic irritations in the oral cavity caused by poorly made and ill-fitting dentures. Further evidence that chronic irritation may produce cancer can be observed in natives of Kashmir who carry a hot basket of charcoal, the kangri, under their clothes in order to keep warm. These Kashmirians frequently develop cancer of the abdomen. Normally, cancer of this part of the body is rare.

In 1950, the death rate from cancer of the lung was twice as high among the men of Greater London as that among men living in rural districts, and the difference was more pronounced among the older age group. There is evidence that the development of bronchial carcinoma may be due to prolonged exposure to a number of atmospheric carcinogens. Some of these substances, such as radon, benzpyrene and arsenic, are present in town air, though in much lower concentrations than in industry; others, such as nickel, are peculiar to specialized industrial processes.

Some known carcinogens used in industry are paraffin, shale oil, arsenic, tar and pitch, anthracene, creosote, benzene, aromatic amines, chromates, aniline dyes, and B-naphthylamine. Repeated contact of the skin with certain chemicals such as tar, pitch, creosote, asphalt, coke, arsenic, fuel oils, paraffin and lubricating oils, over a long period of time may cause cancer. Carbon tetrachloride has caused cancer of the liver experimentally in mice. The carcinogenic agents mentioned are exogenous factors acting as an irritant on tissues or in some way preparing them or sensitizing them with the result that the normal tissue cells are changed into malignant cells. The immediate cause of cancer is unknown. Its essential nature remains a biological mystery.

An article by Ian McDonald, M.D., "Environmental Factors of Occupational Origin Related to Carcinogenesis," which appeared in the January 1 issue of the Journal of the American Medical Association, listed in table form the lesions that may be associated with occupational carcinogens, with a description of each type and the causative agents.

Industrial physicians should be familiar with carcinogenic agents used in industry. In order to carry on a successful preventive program, the industrial physician must know where carcinogenic substances are being used and the personnel exposed. To obtain this information, frequent visits should be made throughout the given activity. Periodic physical examinations should be performed on all personnel engaged in activities in which contact with carcinogenic substances is known or suspected. The frequency of the

physical examination should be influenced by the type of carcinogenic agent and the length of exposure. Special attention should be given to precancerous lesions, i. e., chronically irritated areas, warts, dark-pigmented moles, keratoses, leukoplakia, persistent ulcers, and burn scars.

(L. B. Shone, CAPT MC USN, Preventive Medicine Division, Bureau of Medicine and Surgery)

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General Sanitation

Trailer Court Sanitation

Commands having trailer courts on, or adjacent to, their activities should be cognizant of the "Trailer Court Sanitation Manual" prepared in 1953 by the U.S. Public Health Service.

This manual has been prepared as an aid to Federal agencies and state and local health and zoning authorities. It provides adequate environmental sanitation standards for all areas where the parking of trailer coaches occurs. The term "environmental sanitation," as used in relation to trailer courts, covers all phases of sanitation, including housing hygiene and accident prevention.

The manual will be distributed by the Bureau of Medicine and Surgery, in March, to all major activities having trailer courts. A few copies will be stocked at the Bureau for distribution to requesting activities having official need.

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Services of BuDocks Sanitary Engineering and Pest Control Sections in Pacific Areas

The Director, Pacific Division, Bureau of Yards and Docks, promulgated an instruction (DIRPACDOCKSINST 6250.1), informing all commands in the Pacific that DIRPACDOCKS will provide technical guidance and assistance in implementing the sanitation and pest control program as it concerns water supplies, sewerage systems, boiler feedwater treatment, swimming pools, refuse and garbage disposal, insects, rodents, and other pest animals, on request.

Request for these services from DIRPACDOCKS shall be in written form, letter or dispatch, outlining the problem of the type of assistance needed.

* * * * *

Intestinal Protozoa of American Travelers
Returning from Europe

On theoretical grounds there are three likely causes of the diarrhea of travelers: food poisoning, especially by staphylococcal toxins; bacterial infections such as salmonellosis and shigellosis; and amebiasis and other protozoan infections. Little scientific support is available for the views that "water," "change in the diet," or "viruses" are causes of the diarrhea.

The occurrence of diarrhea shortly after arrival in a foreign country, a history of exposure to unusual or exotic foods and an explosive onset of symptoms, with many watery bowel movements, nausea, vomiting, some fever, severe exhaustion and rapid recovery, suggest the diagnosis of staphylococcal toxemia. Although the diarrhea produced by food poisoning may be extremely upsetting to the individual patient, no public-health hazard is introduced to the country upon the return of the affected traveler.

The acute bacterial infections are much more important and may be responsible for later chronic disease. As a rule, however, shigellosis and salmonellosis cause febrile illnesses of greater severity and longer duration than the typical enteritis of tourists. Only rarely do the pathogens persist in the stool.

The clinical picture of amebiasis may range from vague intestinal discomfort to typical bloody dysentery. Amebiasis, because of the public-health aspects of the disease, the potential seriousness of the infection to the patient, and its protean manifestations, represents a major problem.

In an effort to determine how much amebiasis and other protozoan infection is acquired by American tourists in Europe, 804 stool specimens from 582 different persons were examined. The stools were obtained from 222 American students who provided "paired" specimens before and after a 2-months' vacation in Europe during the summer of 1953 -- and also from 360 other students of whom 180 cooperated en route to Europe and the other 180 supplied "nonpaired" specimens during the return voyage.

No major increase of Endamoeba histolytica and other intestinal protozoa occurred, and no evidence was obtained that travelers to Europe acquire sufficient protozoan disease to present a public-health hazard on their return.

Over half the tourists had diarrhea during their 2-months' stay in Europe. The frequency of diarrhea was considerably higher in those who visited the Mediterranean countries than in those who visited only non-Mediterranean countries. There was no significant difference, however, in the occurrence of protozoal infection in these two groups of travelers.

It is suggested that the diarrhea of the continental traveler is not due to the fecal contamination of food and water but is more probably caused by the ingestion of toxins such as those produced by staphylococci.

No evidence for the acquisition of helminthic infections was obtained.

The frequency of E. histolytica infection of healthy American students on a single stool examination was 4%, and the total prevalence of protozoan infection was 25%. (New England J. Med., Sept. 16, 1954; B. H. Kean, M. D., and W. G. Smillie, M. D.)

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Training and Visual Aids

The Environmental Sanitation Technician

The critical shortage of medical officers in the Navy makes it of increasing importance that medical officers reduce their workload wherever this can be accomplished without the lowering of high standards of professional services. One way of accomplishing this is by utilizing enlisted sanitary technicians. These individuals have been specially trained to carry out frequent inspections which will bring sanitary deficiencies to the attention of medical officers. When properly utilized, the sanitary technician can help the medical officer to do an excellent job in environmental sanitation and concomitantly save the medical officer many hours of time. The following notes outline the training background of the "environmental sanitation technician:"

The graduation, in January, of the 17th class by the Environmental Sanitation Technician Course at the U. S. Naval Hospital, Oakland, Calif., marked the celebration of the school's fourth anniversary. The class brought the total number of technicians graduated there to 319.

The course was established in November 1950, a revival of the training given originally during World War II at Bethesda, Maryland, under the title, "Epidemiology and Sanitation Technician's Course." Although the earlier title probably is more descriptive of the curriculum, for convenience in speaking, the name has evolved to "Environmental Sanitation Technician Course." The former special ratings of "epidemiology technician" and "malariology technician" were merged into the present rating of "environmental sanitation technician" to which the Navy job number 8432 was assigned.

The school anticipates that recently increased facilities will permit the training of 5 classes, of about 40 students each, yearly. About 25% of the 319 graduates, who might properly be called "preventive medicine technicians," have left the naval service, and most of these enjoy good positions as civilians in public health work.

During the 22-week course, the environmental sanitation technician student receives 756 hours of instruction in the classroom, laboratory, and on field trips. The time is devoted to six subjects as follows:

EST-1, Organization and Administration, 56 hours: Intensive training in public speaking and teaching technics, in operation of projection equipment,

et cetera, and in the fundamentals of the Navy's preventive medicine program and its relation to the programs of other agencies. Emphasis on good instructional technics is important because the EST's duties include lecturing on food service, venereal disease control, malaria discipline, and personal hygiene.

EST-2, Bacteriology and Immunology, 185 hours: Instruction in the technics used in milk, water, sewage, and communicable disease bacteriology; instruction in basic immunology devoted chiefly to collection, handling, shipping, and preservation of specimens for disease identification and survey; introduction to biological warfare defense.

EST-3, Epidemiology, 65 hours: Basic concepts of methods of spread and control of communicable disease, and survey and investigation technics for study of epidemic and endemic disease. (This course is integrated with other courses.)

EST-4, Vital Statistics, 25 hours: Limited to tabulation, analysis, and graphic presentation of disease incidence and other phenomena related to health.

EST-5, Entomology and Parasitology, 146 hours: This is considered one of the major courses. The student must learn laboratory and field technics for surveys of Plasmodia, other protozoal parasites and the helminths, and for the identification of insects. He is also taught methods for survey and control of insects and other arthropods of medical importance and for rodent identification and control.

EST-6, Military Sanitation, 279 hours: This receives greatest emphasis under current schedules because, in the "peace-time" effort, the majority of graduates are applying routine methods of environmental sanitation in fixed naval establishments and on the larger ships where the medical officer's chief responsibility is to see that the environment remains free of disease hazards of all types. Instruction includes methods of inspecting provisions, the principles of water supply sanitation, sanitary food service, waste disposal, swimming pool sanitation, industrial hygiene and safety, habitability, and passive defense, with special emphasis on routine inspections, surveys, and reporting.

The foregoing outline of the many phases of the EST Course attests to the fact that, ashore or afloat, the utilization of the enlisted sanitary technician will relieve the medical officer of a large burden of technical inspection, supervision, and kindred responsibilities.

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Insect and Rodent Control

Improvement in Efficiency and Safety of Navy Pest Control Operations

A Department of the Navy Committee on Pest Control was established by the Secretary of the Navy, and the Bureau of Medicine and Surgery was

designated as coordinator. This Committee provides for long needed coordination of the interests of the several technical and management control bureaus and offices with reference to pests of health and economic significance. In addition, the Secretary of the Navy has assigned specific responsibilities to certain bureaus and offices in this field.

During the fiscal year 1954, the Bureau cooperated very closely with the recently established Pest Control Section of the Bureau of Yards and Docks. Joint visits were made to eleven naval districts to discuss pest control problems and the coordination of medical and public works functions. The increased interest and activity by the Bureau of Yards and Docks has already resulted in more effective and efficient support by Public Works Officers of medical department recommendations, as well as great savings to the Navy in losses from structural and material pests. As a result of recommendations during joint visits, training conferences for pest control personnel, medical and public works, were held in 6 naval districts. These served to increase the efficiency and safety of pest control operations. (BuMed Management Improvement Program Report for Fiscal Year 1954)

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The printing of this publication has been approved by the Director of the Bureau of the Budget, June 23, 1952.

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☆ U. S. GOVERNMENT PRINTING OFFICE: 1954 O-311216

Permit No. 1048

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BUREAU OF MEDICINE AND SURGERY

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